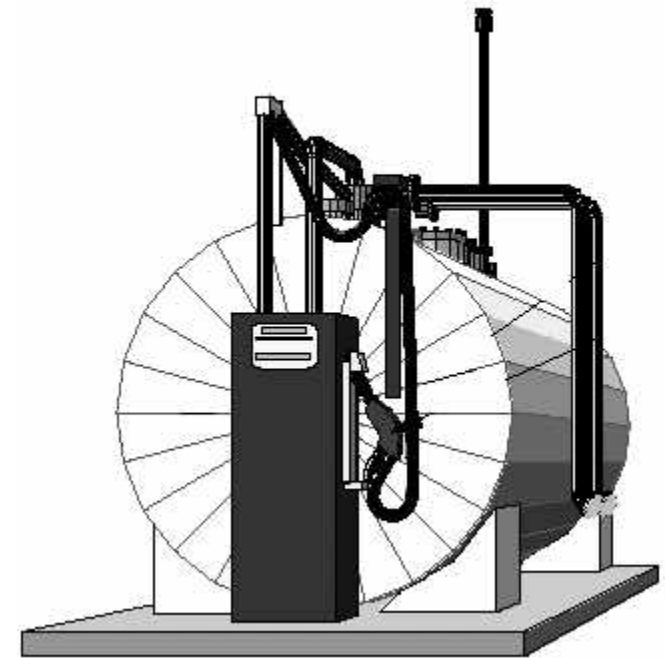


ABOVE GROUND STORAGE TANK (AST) VAPOR RECOVERY WORKSHOP

June 21, 2001

Engineering Evaluation Unit
Monitoring and Laboratory Division
California Air Resources Board
(916) 327-0900



Workshop Agenda

- Announcement of Proposed Rulemaking for Vapor Recovery Systems using above ground storage tanks (ASTs)
- Discussion of Interim Guidelines for Certifying AST Vapor Recovery Systems
 - AST Definitions
 - Phase I requirements, standards, specifications
 - Phase II requirements, standards, specifications
- Closing - EVR Kick-Off

Proposed AST Rulemaking

- Approved Enhanced Vapor Recovery (EVR) requirements do not address ASTs.
- Requirements, standards, and specifications to be at EVR levels.
- Proposed rulemaking in mid-2003.
- Addresses one of CAPCOA's "top ten" issues
- Industry and public involvement.

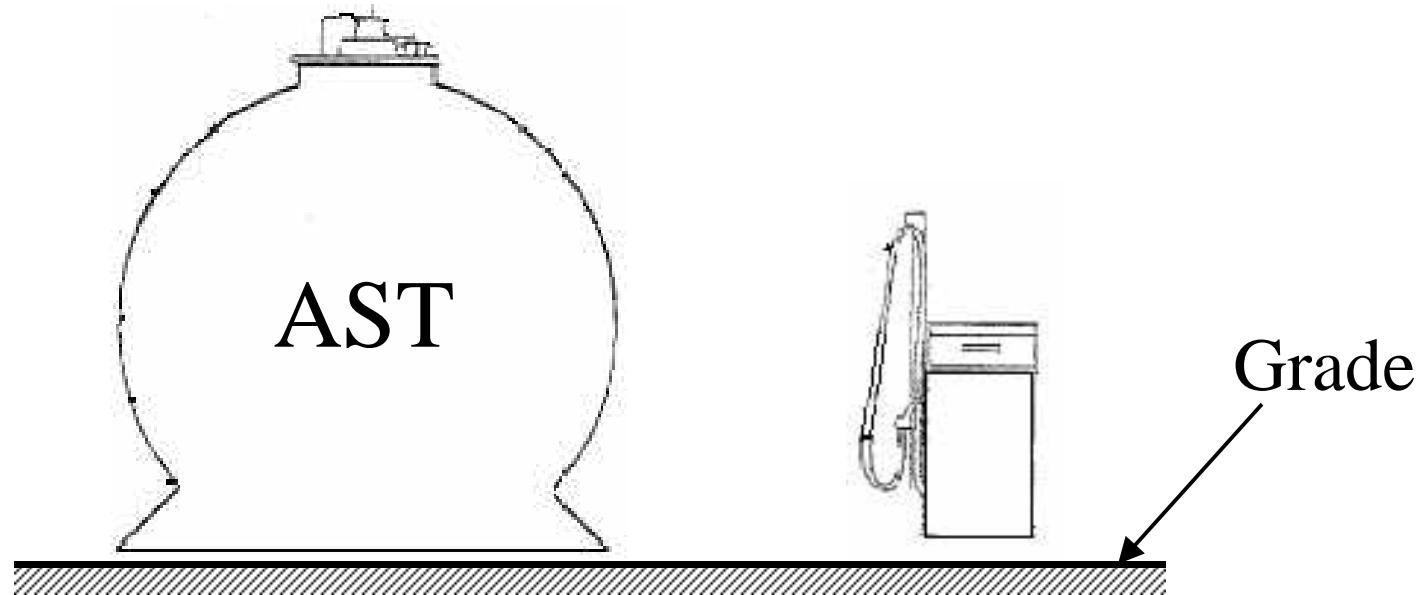
Interim AST Certification Guidelines

- Guidelines for certifying AST vapor recovery systems from now until the date of the new AST EVR rulemaking.
- Guidelines will address vapor recovery systems using ASTs as defined.

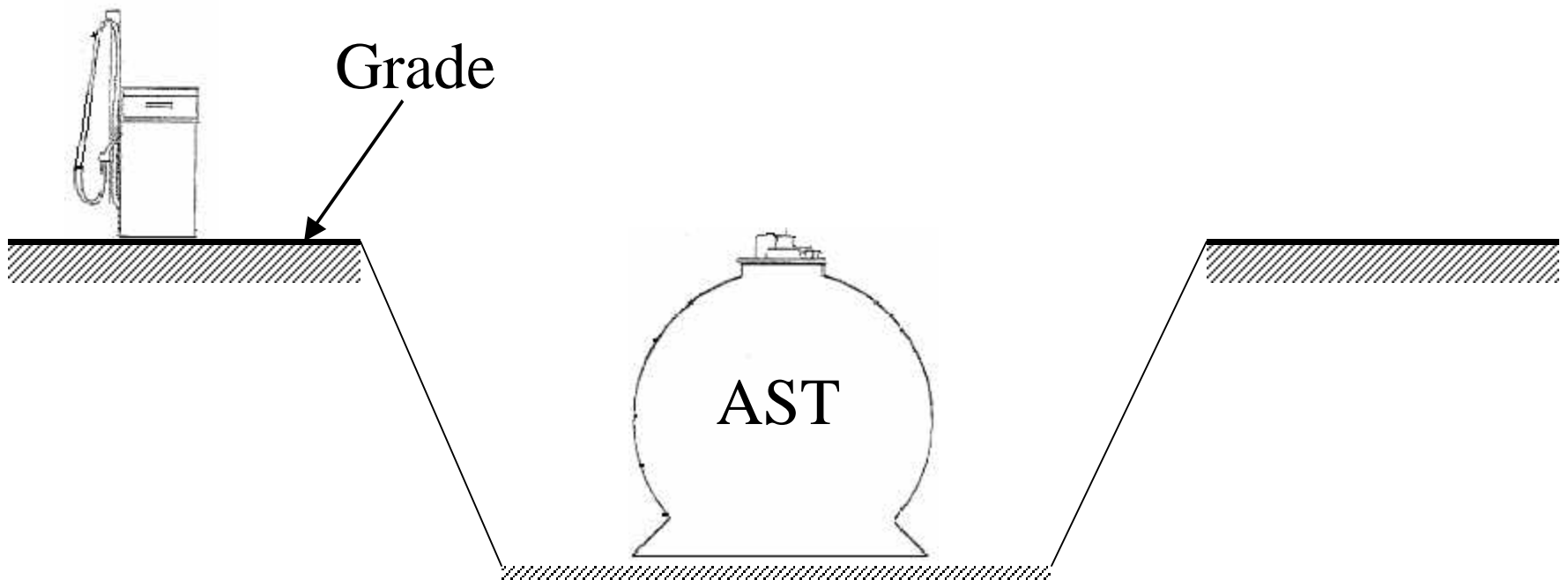
AST System Definition

A vapor recovery system that uses a horizontal or vertical gasoline storage tank that is intended for fixed installation, without backfill, and is located above or below grade.

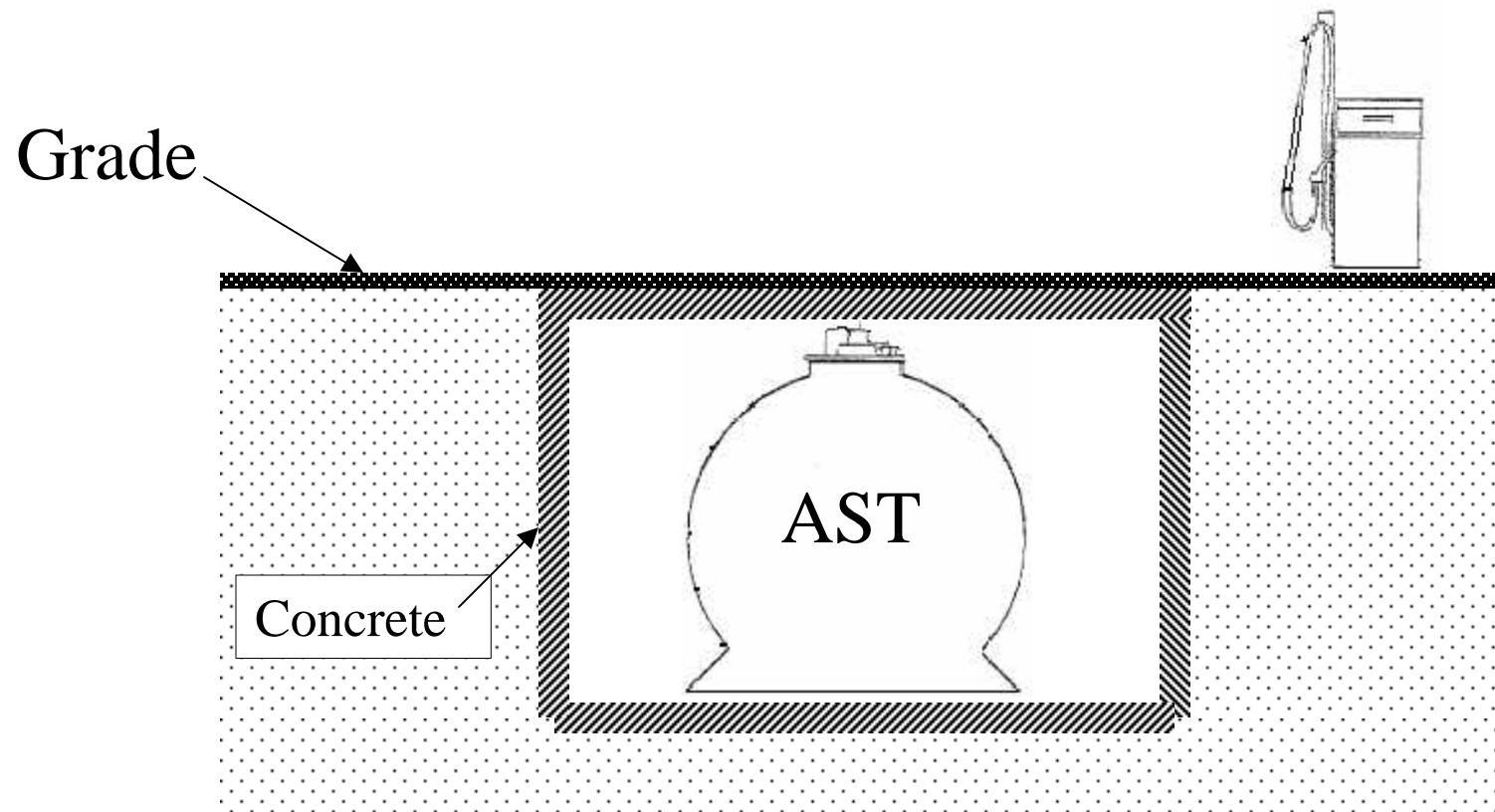
Example: Above Grade AST



Example: Below Grade AST



Example: Below Grade Vaulted AST



Definitions (cont.,)

- Top Mount Configuration - System components mounted in direct contact with the top surface of the tank shell.
- Side Mount Configuration - System components mounted in direct contact with the side wall of the tank shell.
- Remote Configuration - System components not mounted in direct contact with the tank shell.

Phase I Interim Certification Requirements

- Two point fill and vapor connections.
- Side fill and vapor connections required if use of ladder or stairs above 3 feet is needed.
- Tight fit between delivery line to storage tank fill adapter and vapor line to storage tank vapor recovery adapter.
- Tank capacity > 300 gallons

Phase I Interim Certification Requirements - P/V Valve

Required Pressure Settings:

3.0±0.5 inches H₂O Positive Pressure

8.0±2.0 inches H₂O Negative Pressure

Phase I Interim Certification Testing

- Static pressure test per TP-201.3B
- Efficiency test per TP-205.1
- Pressure integrity test of pressure/vent valve using TP-201.2B, Appendix 1
- Pressure integrity test of containment boxes w/drain valves using TP-201.2B
- Pressure integrity test of drop tube w/overflow protection using TP-201.2O

Phase I Interim Certification Testing

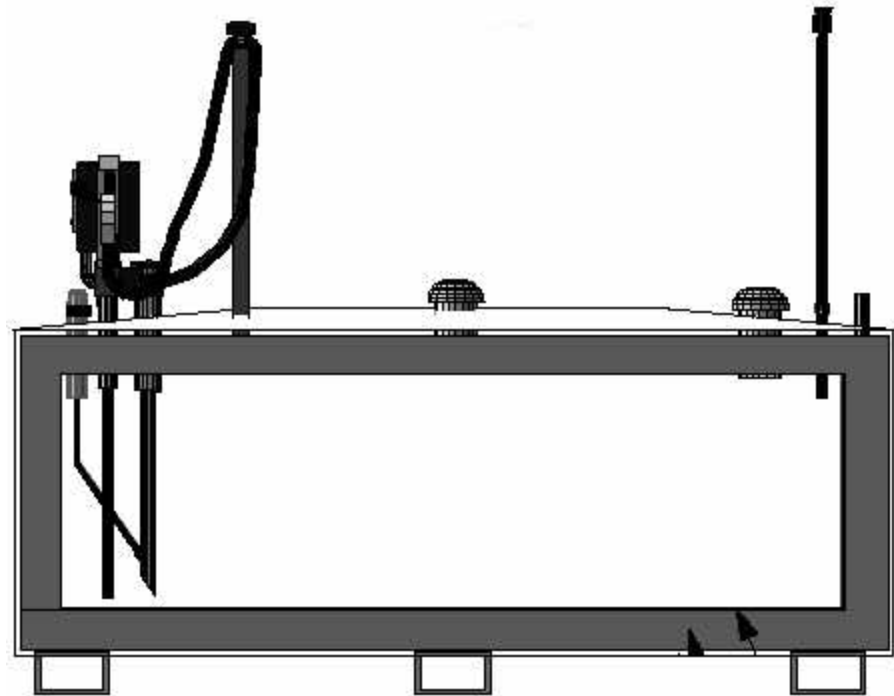
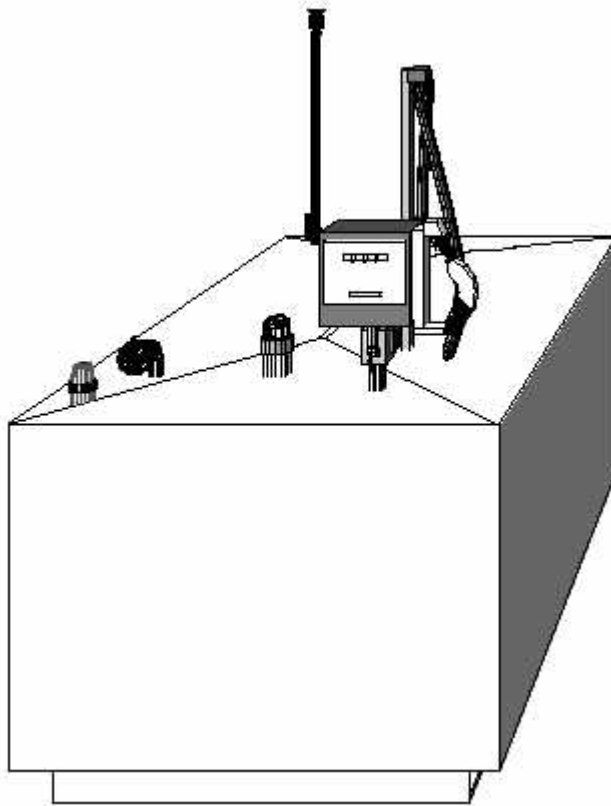
- Bench testing of emergency vent, poppeted vapor adapter, and fill and vapor dust caps.
- Examine for leaks from vapor connectors and fittings during static pressure performance test.
- Measure gasoline drippage during fill and vapor disconnect.

Phase I Comments

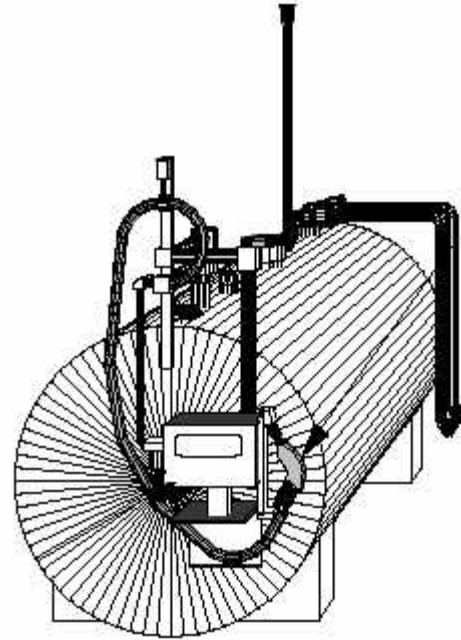
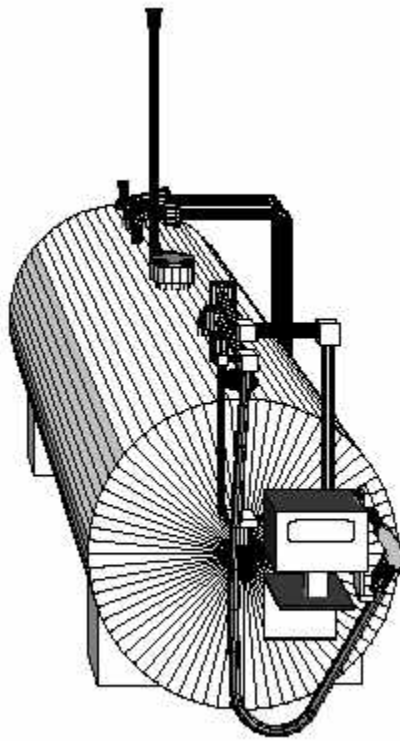
Phase II Interim Certification Requirements

- Use of certified balance system components from Executive Order G-70-52-AM and/or approval letters.
- Liquid removal capability on low points with automatic evacuation system.
- Routing of coaxial hose shall be consistent with the following configurations.

Hose Configuration - Top Mount

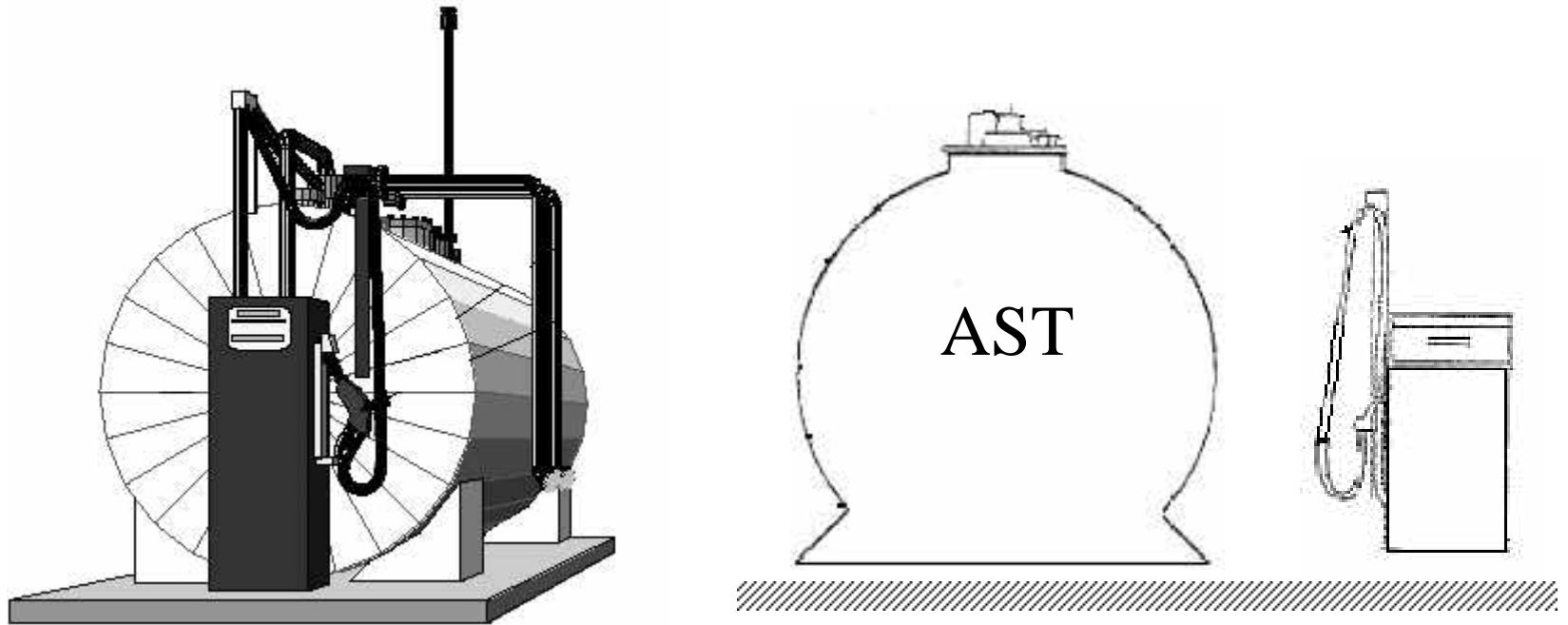


Hose Configuration - End or Side Mount



Liquid removal
device required

Hose Configuration - Ground / Remote Mount



Phase II Interim Certification Testing

- Static pressure test per TP-201.3B
- Efficiency test per TP-205.2
- CARB approved ORVR compatibility test per procedure developed by applicant.
- Liquid removal test per TP-201.6, where applicable.

Phase II Interim Certification Testing

- Dynamic pressure performance test per TP-201.4, where applicable.
- Air to liquid ratio test per TP-201.5, where applicable.
- Examine for leaks from vapor connectors and fittings during static pressure performance test.

Additional Phase I and Phase II Interim Testing Requirements

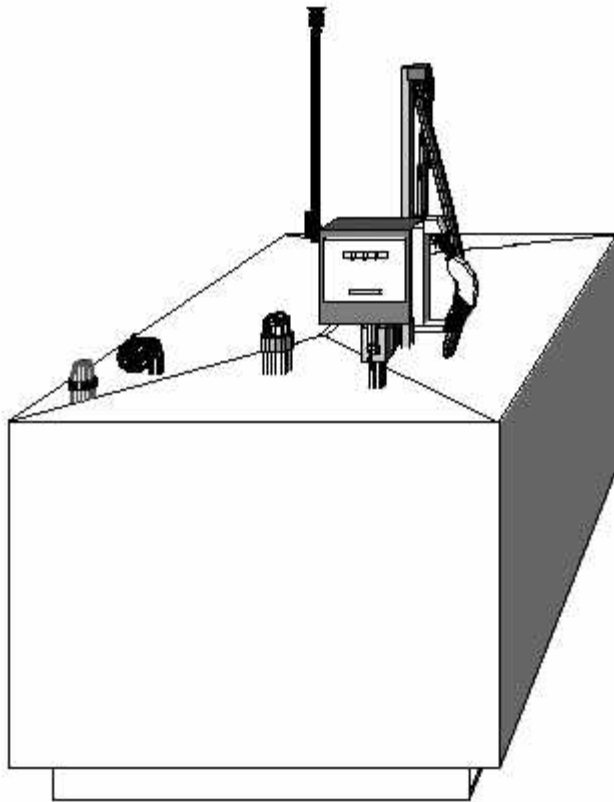
- Operational test of at least 90 days
- Operational test conducted during summer months
- Monitor and record pressure throughout operational test

Phase II Comments

EVR Kick-off

- Request volunteer work group
 - meet and discuss proposed EVR standards and conduct preliminary evaluation of current ASTs;
 - host sites for testing;
 - review test results;
 - develop and review draft EVR requirements, standards, and specifications.
- AST EVR workshop proposed in January, 2002

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